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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,564	06/02/2000	Alberto Profumo	3286-0103P	7632

7590 07/21/2004  
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EXAMINER

FERRIS, DERRICK W

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/586,564

Applicant(s)

PROFUMO ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. **Claims 18-36** as amended are still in consideration for this application. Applicant has amended claims 18, 30, 35, and 36.
2. Examiner does **not withdraw** the obviousness rejection to *Ghaibeh et al.* (“*Ghaibeh*”) in view of *Tajima et al.* (“*Tajima*”). In address applicant’s arguments, applicant argues the new claim amendment. First, it is unclear what applicant argues since applicant fails to provide support in applicant’s specification for applicant’s amendment to the claims (disclosure) in reference to bottom of MPEP 714.02. Thus the context of applicant’s argument may be unclear.

At issue is the following claim limitation:

“wherein said first additional modality includes evaluating bandwidth allocation in the system by said master *on an instantaneous basis* based on status of queues in the plurality of peripheral stations received from said plurality (of peripheral stations) to allocate guaranteed bandwidth, *defined during the connection setup phase*, to at least one requesting peripheral station.”

Examiner notes the claim amendment appears to be supported in part by applicant’s specification at page 6, lines 32-35 which states the following:

“In the upstream direction, each PS sends to the MS indications *about (instantaneous) queue status* and instantaneous bandwidth need for dynamic allocation. *This message is called a request*”.

As such, applicant appears to argue the concept of instantaneous bandwidth on a connection basis. In particular, applicant appears to argue that *Ghaibeh* teaches permits are generated on a “polling” or “reserved” basis. Examiner notes that the evaluation of an instantaneous basis is actually performed by using a request (see cited passage above from applicant’s specification).

As such, from this perspective, *Ghaibeh* teaches the claim limitation since *Ghaibeh* teaches

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generating requests in the upstream direction by the network units NUs (i.e., peripheral stations). *Ghaibeh* teaches that upstream data transmission is provided on a “permit” basis controlled by the headend (i.e., master station) based on *monitoring ATM queue sizes at the respective NUs*, see e.g., column 2, lines 28-31. However, the status of the queues are transmitted as *requests* of the upstream portion where the requests contain the status of the ATM queues in the network units, see e.g., column 6, line 60 – column 7, line 14. In particular, the status of a VBR queue (e.g., in reference to a first modality) is considered. Specifically, the respective queue size fields are used to update registers (shown in figure 11) maintained at the HEMAC 28 (i.e., master station) as part of the process for *allocating* upstream bandwidth permits (i.e., connection setups), see e.g., column 7, lines 9-11. In summary, there is a difference when the information is obtained by the master station and when the information is used by the master station to setup a connection which is requested by a peripheral station and granted/permitted by the master. The information is obtained through polling or reserved times. In particular, information is used in a reservation request as mentioned above in requesting a connection. The master station furthermore uses the information gathered in handling the request. Furthermore, the request sent to the master station contains instantaneous information about the queues in the peripheral stations. Examiner would like to also point out that applicant’s specification teaches at page 7, lines 12-23 and page 10, lines 9-19 that the information about the queues is transmitted to the master with a certain minimum periodicity determined by programming at the master station to guarantee fulfillment of all traffic parameters of active connections (i.e., the requests are “reserved”).

***Claim Rejections - 35 USC § 103***

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 18-27, 30-31, and 35-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,978,374 to *Ghaibeh et al.* ("*Ghaibeh*") in view of "Asymmetric ATM-PON interface compliant to ITU-T/FSAN Standard for global optical access system" to *Tajima et al.* ("*Tajima*").

As to **claim 18**, *Ghaibeh* discloses a point-to-multipoint network where figure 1 shows at least one head-end 22 (i.e., master station) and a plurality of network units (i.e., peripheral stations). In particular, *Ghaibeh* discloses a system and method for assigning/allocating bandwidth on the transmission channel from the network units 26 to the head-end 22 where bandwidth is assigned using "permits" (i.e., grants) in the downstream using a one byte MAC header (i.e., MAC protocol) and requested using "requests" in the upstream [see figure 6]. In addition, *Ghaibeh* teaches a reasonable but broad interpretation of both static and dynamic allocation techniques including CBR, VBR, and ABR (for a minimum guaranteed bandwidth). Thus both a "guaranteed dynamic bandwidth" and "available bandwidth technique" are taught by the reference [e.g., column 2, lines 50-67; column 5, lines 55-67].

What may not be clear from *Ghaibeh* is the further limitation "preallocating a certain portion of total bandwidth in a static modality to at least a portion of the plurality of Peripheral Stations, said preallocation representing an assignment of fixed capacity to

said at least a portion, on the basis of information about active connections without considering status of queues in the plurality of Peripheral Stations”. Examiner notes that the limitation is implicitly taught since the reference supports CBR. In particular, see e.g., column 5, lines 55-67 and column 09, line 57 – column 10, line 11 of *Ghaibeh*. However, assuming, arguendo, that CBR is not preallocated, then examiner notes the following obviousness rejection below as well.

*Tajima* also teaches an ATM point-to-multipoint system using a MAC based protocol (e.g., see Abstract). *Tajima* further teaches the above-cited limitation at the bottom left-hand column on page 28.

Examiner’s proposed modification to the *Ghaibeh* reference would be to further illustrate that CBR traffic is pre-assigned (i.e., preallocated). Thus examiner notes that it would have been obvious to one skilled in the art prior to applicant’s invention to perform the further limitation of preallocating a certain portion of total bandwidth in a static modality to at least a portion of the plurality of Peripheral Stations, said preallocation representing an assignment of fixed capacity to said at least a portion, on the basis of information about active connections without considering status of queues in the plurality of Peripheral Stations. In particular, one skilled in the art would have been motivated to perform said limitation to decrease the cell delay of legacy traffic. *Tajima* further teaches the above-mentioned motivation at the bottom left-hand column on page 28. Finally, examiner also notes a reasonable expectation level of success since the dynamic bandwidth algorithm as taught by both *Tajima* and *Ghaibeh* would be able to further handle the remaining bandwidth allocation on an add needed basis.

As to **claims 19-21**, see column 9 lines 57-67 through column 10, lines 1-46.

As to **claim 22**, see column 10, lines 21-35.

As to **claim 23-27**, see column 6, lines 60-67 through column 7, lines 1-13 and column 9 lines 57-67 through column 11, lines 1-55.

As to **claim 30**, see the rejection for claim 1.

As to **claim 31**, see the rejection for claim 2.

As to **claims 35-36**, see similar rejection for claim 1.

5. **Claims 28-29 and 32-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,978,374 to *Ghaibeh et al.* ("*Ghaibeh*") in view of "Asymmetric ATM-PON interface compliant to ITU-T/FSAN Standard for global optical access system" to *Tajima et al.* ("*Tajima*") and in further view of "Data Link Control Protocols for Wireless ATM Access Channels" to *Narasimhan et al.* ("*Narasimhan*").

As to **claims 28-29**, *Ghaibeh* is silent or deficient to retransmission of cells that contain errors (i.e., a data link layer). Examiner notes that retransmission of cells through acknowledgment messages are well known in the art prior to applicant's invention. As support, *Narasimhan* discloses transmitting an acknowledgment and corresponding packets thus providing a motivation for a retransmission mechanism [page 755].

As both reference discloses telecommunications in general, and more particularly, ATM packets based on a dynamic TDMA framework, examiner notes a motivation to combine the subject matter as a whole for both references. In other words, one would be motivated to modify the teachings of *Ghaibeh* to provide similar error correction since both inventions add a MAC layer to ATM.

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As to **claim 32-34**, see column 6, lines 60-67 through column 7, lines 1-13 and column 9 lines 57-67 through column 11, lines 1-55 of *Ghaibeh*.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DWF

Derrick W. Ferris  
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Art Unit 2663



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